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SEQUENCE LISTING

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Sangamo Biosciences, Inc.

<120> Selection of Sites for Targeting by Zinc Finger
Proteins and Methods of Designing Zinc Finger Proteins
to Bind to Preselected Sites

<130> 019496-001800US

<140> US 09/229,007
<141> 1999-01-12

<160> 97

<170> PatentIn Ver. 2.1

<210> 1
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:exemplary motif
characterizing the C-2H-2 class of zinc finger
proteins (ZFP)

<220>
<221> MOD_RES
<222> (1)..(25)
<223> Xaa = any amino acid

<220>
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<222> (4)..(5)
<223> Xaa = any amino acid, may be present or absent

<220>
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<222> (23)..(24)
<223> Xaa = any amino acid, may be present or absent

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Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15
Xaa Xaa His Xaa Xaa Xaa Xaa Xaa His
20 25

<210> 2
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:peptide linker

<400> 2

Thr Gly Glu Lys Pro
1 5

<210> 3

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:peptide linker

<400> 3

Gly Gly Gly Gly Ser
1 5

<210> 4

<211> 8

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence:peptide linker

<400> 4

Gly Gly Arg Arg Gly Gly Gly Ser
1 5

<210> 5

<211> 9

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:peptide linker

<400> 5

Leu Arg Gln Arg Asp Gly Glu Arg Pro
1 5

<210> 6

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:peptide linker

<400> 6

Leu Arg Gln Lys Asp Gly Gly Gly Ser Glu Arg Pro
1 5 10

<210> 7
 <211> 16
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:peptide linker

<400> 7
 Leu Arg Gln Lys Asp Gly Gly Gly Ser Gly Gly Gly Ser Glu Arg Pro
 1 5 10 15

<210> 8
 <211> 85
 <212> PRT
 <213> Mus sp.

<220>
 <223> DNA binding domain of mouse transcription factor
 Zif268

<400> 8
 Tyr Ala Cys Pro Val Glu Ser Cys Asp Arg Arg Phe Ser Arg Ser Asp
 1 5 10 15
 Glu Leu Thr Arg His Ile Arg Ile His Thr Gly Gln Lys Pro Phe Gln
 20 25 30
 Cys Arg Ile Cys Met Arg Asn Phe Ser Arg Ser Asp His Leu Thr Thr
 35 40 45
 His Ile Arg Thr His Thr Gly Glu Lys Pro Phe Ala Cys Asp Ile Cys
 50 55 60
 Gly Arg Lys Phe Ala Arg Ser Asp Glu Arg Lys Arg His Thr Lys Ile
 65 70 75 80
 His Leu Arg Gln Lys
 85

<210> 9
 <211> 94
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:amino acids
 531-624 in Sp-1 transcription factor

<400> 9
 Pro Gly Lys Lys Lys Gln His Ile Cys His Ile Gln Gly Cys Gly Lys
 1 5 10 15
 Val Tyr Gly Lys Thr Ser His Leu Arg Ala His Leu Arg Trp His Thr
 20 25 30
 Gly Glu Arg Pro Phe Met Cys Thr Trp Ser Tyr Cys Gly Lys Arg Phe
 35 40 45

Thr Arg Ser Asp Glu Leu Gln Arg His Lys Arg Thr His Thr Gly Glu
 50 55 60

Lys Lys Phe Ala Cys Pro Glu Cys Pro Lys Arg Phe Met Arg Ser Asp
 65 70 75 80

His Leu Ser Lys His Ile Lys Thr His Gln Asn Lys Lys Gly
 85 90

<210> 10
 <211> 98
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<220>
 <223> Description of Artificial Sequence:Sp-1
 transcription factor consensus sequence

<400> 10
 Met Glu Lys Leu Arg Asn Gly Ser Gly Asp Pro Gly Lys Lys Lys Gln
 1 5 10 15

His Ala Cys Pro Glu Cys Gly Lys Ser Phe Ser Lys Ser Ser His Leu
 20 25 30

Arg Ala His Gln Arg Thr His Thr Gly Glu Arg Pro Tyr Lys Cys Pro
 35 40 45

Glu Cys Gly Lys Ser Phe Ser Arg Ser Asp Glu Leu Gln Arg His Gln
 50 55 60

Arg Thr His Thr Gly Glu Lys Pro Tyr Lys Cys Pro Glu Cys Gly Lys
 65 70 75 80

Ser Phe Ser Arg Ser Asp His Leu Ser Lys His Gln Arg Thr His Gln
 85 90 95

Asn Lys

<210> 11
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:natural Zif268
 binding site

<400> 11
 gcgtgggcgc

10

<210> 12
 <211> 10
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:target site
containing three D-able subsites

<400> 12

ggntgngggn

10

<210> 13

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:target site
with two overlapping D-able subsites

<400> 13

nngkngknnn

10

<210> 14

<211> 10

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:target site
with three overlapping D-able subsites

<400> 14

nngkngkngk

10

<210> 15

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 1

<220>

<221> modified_base

<222> (1)..(22)

<223> n = g, a, c or t

<220>

<221> modified_base

<222> (10)..(12)

<223> n = g, a, c or t, may be present or absent

<400> 15

gnggnngnnn nngnggnngn nn

22

<210> 16

<211> 23

<212> DNA

<213> Artificial Sequence

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 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 16
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<210> 17
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<220>
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 motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
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 <223> n = g, a, c or t, may be present or absent

<400> 17
 gnggnngnnn nngnngnggn nn

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<210> 18
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<220>
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 motif searched by protocol 1

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 <222> (1)..(23)
 <223> n = g, a, c or t

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 <223> n = g, a, c or t, may be present or absent

<400> 18
gnggnngnnn nnnngnngngg nnn

23

<210> 19
<211> 22
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<213> Artificial Sequence

<220>
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motif searched by protocol 1

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<223> n = g, a, c or t

<220>
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<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 19
gnggnngnnn nngnggnngn gg

22

<210> 20
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 1

<220>
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<222> (1)..(23)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 20
gnggnngnnn nnnngngnng ngg

23

<210> 21
<211> 22
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<213> Artificial Sequence

<220>
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motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
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<400> 21
 gnngngggnnn nngnggngnn nn

22

<210> 22
 <211> 23
 <212> DNA
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<220>
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 motif searched by protocol 1

<220>
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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 22
 gnngngggnnn nnnngnggngn nnn

23

<210> 23
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 1

<220>
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 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
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 <223> n = g, a, c or t, may be present or absent

<400> 23
 gnngngggnnn nngnnngnggn nn

22

<210> 24
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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motif searched by protocol 1

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<400> 24
gnngnggnnn nnnngngngg nnn

23

<210> 25
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motif searched by protocol 1

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<400> 25
gnngnggnnn nngnggnngn gg

22

<210> 26
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<220>
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motif searched by protocol 1

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<223> n = g, a, c or t

<220>
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<400> 26
 gnngnggnnn nnnngnggng ngg

23

<210> 27
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 <212> DNA
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<220>
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 motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
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 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 27
 gnngngngg nnnngnggng nnn

23

<210> 28
 <211> 24
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 motif searched by protocol 1

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<220>
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 <223> n = g, a, c or t, may be present or absent

<400> 28
 gnngngngg nnnngnggng gnnn

24

<210> 29
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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 motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 29
 gnngnngngg nnnngnngngg nnn

23

<210> 30
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 1

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 <223> n = g, a, c or t

<220>
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 <222> (12)..(14)
 <223> n = g, a, c or t, may be present or absent

<400> 30
 gnngnngngg nnnngnngng gnnn

24

<210> 31
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 <212> DNA
 <213> Artificial Sequence

<220>
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<220>
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 <222> (11)..(13)
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<400> 31
gnngnngngg nnnngnggng ngg

23

<210> 32
<211> 24
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motif searched by protocol 1

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<400> 32
gnngnngngg nnnngngggn gngg

24

<210> 33
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<212> DNA
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<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 1

<220>
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<222> (1)..(19)
<223> n = g, a, c or t

<400> 33
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19

<210> 34
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 1

<220>
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<223> n = g, a, c or t

<400> 34
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19

<210> 35
 <211> 19
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 1

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 <223> n = g, a, c or t

<400> 35
 gnngnngngg nngnngngg

19

<210> 36
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 2

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 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 36
 knngnnknkn nnknngnnkn nn

22

<210> 37
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 2

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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 37
knggnnknnn nnnknnggnnk nnn

23

<210> 38
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by.protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 38
knggnnknnn nnknknnggn nn

22

<210> 39
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 39
knggnnknnn nnnknknngg nnn

23

<210> 40
<211> 22
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 40
knngnnknkn nnknknknkn gg

22

<210> 41
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 41
knngnnknkn nnnknknknk ngg

23

<210> 42
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<221> modified_base
<222> (1)..(22)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 42
knknnggnnn nnknnggnkn nn

22

<210> 43
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 2

<220>
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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 43
 knnknggnnn nnnknngggnk nnn

23

<210> 44
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
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 motif searched by protocol 2

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 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 44
 knnknggnnn nnknknnggn nn

22

<210> 45
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
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 motif searched by protocol 2

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 <223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 45
knnknnggnnn nnnknnknngg nnn

23

<210> 46
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 46
knnknnggnnn nnknknknkn gg

22

<210> 47
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
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motif searched by protocol 2

<220>
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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 47
knnknnggnnn nnnknnknkn ngg

23

<210> 48
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
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 motif searched by protocol 2

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 <223> n = g, a, c or t

<220>
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 <223> n = g, a, c or t, may be present or absent

<400> 48
 knnknnkngg nnknggnkn nn

22

<210> 49
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 2

<220>
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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (12)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 49
 knnknnkngg nnnknggnk nnn

23

<210> 50
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 2

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 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 50
knnknnknngg nnknnknnggn nn

22

<210> 51
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

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<223> n = g, a, c or t

<220>
<221> modified_base
<222> (12)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 51
knnknnknngg nnnknnknngg nnn

23

<210> 52
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

<220>
<221> modified_base
<222> (1)..(22)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 52
knnknnknngg nnknnknknkn gg

22

<210> 53
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

<220>
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<223> n = g, a, c or t

<220>
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<222> (12)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 53
knnknnknngg nnnknnknnk ngg

23

<210> 54
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

<220>
<221> modified_base
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<223> n = g, a, c or t

<400> 54
knnknnknngg nggnnknnn

19

<210> 55
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

<220>
<221> modified_base
<222> (1)..(19)
<223> n = g, a, c or t

<400> 55
knnknnknngg nnknnggnnn

19

<210> 56
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 2

<220>
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 <222> (1)..(19)
 <223> n = g, a, c or t

<400> 56
 knnknnknngg nnknnknngg

19

<210> 57
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 57
 knnknnnnn nnknngknnkn nn

22

<210> 58
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 58
 knnknnnnn nnnknngknnk nnn

23

<210> 59
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 59
 kngknnknnn nnknnkngkn nn

22

<210> 60
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 60
 kngknnknnn nnnknnkngk nnn

23

<210> 61
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 61
kngknnknnn nnknnknnkn gk

22

<210> 62
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(23)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 62
kngknnknnn nnnknnknnk ngk

23

<210> 63
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(22)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (10)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 63
knnkngknnn nnkngknnkn nn

22

<210> 64
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 64
 knnkngknnn nnknkgknnk nnn

23

<210> 65
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 65
 knnkngknnn nnknknkgkn nn

22

<210> 66
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 66
 knnkngknnn nnknknkgk nnn

23

<210> 67
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (10)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 67
 knnkngknnn nnknnknnkn gk

22

<210> 68
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 68
 knnkngknnn nnnknnknnk ngk

23

<210> 69
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 69
knnknnkngk nnkngknnkn nn

22

<210> 70
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(23)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (12)..(13)
<223> n = g, a, c or t, may be present or absent

<400> 70
knnknnkngk nnnkngknnk nnn

23

<210> 71
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(22)
<223> n = g, a, c or t

<220>
<221> modified_base
<222> (11)..(12)
<223> n = g, a, c or t, may be present or absent

<400> 71
knnknnkngk nnknnkngkn nn

22

<210> 72
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (12)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 72
 knnknnkngk nnnknnkngk nnn

23

<210> 73
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(22)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (11)..(12)
 <223> n = g, a, c or t, may be present or absent

<400> 73
 knnknnkngk nnknnknnkn gk

22

<210> 74
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:target site DNA
 motif searched by protocol 3

<220>
 <221> modified_base
 <222> (1)..(23)
 <223> n = g, a, c or t

<220>
 <221> modified_base
 <222> (12)..(13)
 <223> n = g, a, c or t, may be present or absent

<400> 74
knnknnkngk nnnknnknnk ngk

23

<210> 75
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(19)
<223> n = g, a, c or t

<400> 75
knnknnkngk ngknnknnn

19

<210> 76
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(19)
<223> n = g, a, c or t

<400> 76
knnknnkngk nnkngknnn

19

<210> 77
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site DNA
motif searched by protocol 3

<220>
<221> modified_base
<222> (1)..(19)
<223> n = g, a, c or t

<400> 77
knnknnkngk nnknnkngk

19

<210> 78
<211> 10
<212> DNA
<213> Glycine max

<220>
<223> soybean FAD2-1 cDNA ZFP target segment FAD 1

<400> 78
gaggtagagg

10

<210> 79
<211> 10
<212> DNA
<213> Glycine max

<220>
<223> soybean FAD2-1 cDNA target segment FAD 2

<400> 79
gtcgtgtgga

10

<210> 80
<211> 10
<212> DNA
<213> Glycine max

<220>
<223> soybean FAD2-1 cDNA target segment FAD 3

<400> 80
gttgaggaag

10

<210> 81
<211> 10
<212> DNA
<213> Glycine max

<220>
<223> soybean FAD2-1 cDNA target segment FAD 4

<400> 81
gaggtggaag

10

<210> 82
<211> 10
<212> DNA
<213> Glycine max

<220>
<223> soybean FAD2-1 cDNA target segment FAD 5

<400> 82
taggtggtga

10

<210> 83
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:test sequence

<400> 83
agtgcgcggt gc 12

<210> 84
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site
with base immediately to the 3' side of target
site

<400> 84
agtgcgcggt 10

<210> 85
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site
with base immediately to the 3' side of target
site

<400> 85
gtgcgcggtg 10

<210> 86
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site
with base immediately to the 3' side of target
site

<400> 86
tgcgcggtgc 10

<210> 87
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:target site
with base immediately to the 3' side of target
site

<220>
<221> modified_base
<222> (10)
<223> n = undefined

<400> 87
gcgcggtgcn

10

<210> 88
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:finger F3 for
ordered output from optimal design target site

<400> 88
Glu Arg Asp His Leu Arg Thr
1 5

<210> 89
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:finger F2 for
ordered output from optimal design target site

<400> 89
Arg Ser Asp Glu Leu Gln Arg
1 5

<210> 90
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:finger F1 for
ordered output from optimal design target site

<400> 90
Arg Lys Asp Ser Leu Val Arg
1 5

<210> 91
<211> 7
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: finger for
disordered output from optimal design target site

<400> 91

Arg Ser Asp Glu Leu Thr Arg
1 5

<210> 92

<211> 7

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: finger for
disordered output from optimal design target site

<400> 92

Arg Ser Asp Glu Arg Lys Arg
1 5

<210> 93

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: three finger
ZFP design using F3, F2 and F1 fingers for ordered
output from optimal design target site

<400> 93

Arg Lys Asp Ser Leu Val Arg Arg Ser Asp Glu Leu Gln Arg Glu Arg
1 5 10 15Asp His Leu Arg Thr
20

<210> 94

<211> 21

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: ZFP sequence
(F1, F2 and F3) from SBS design GR-223

<400> 94

Arg Ser Ala Asp Leu Thr Arg Arg Ser Asp His Leu Thr Arg Glu Arg
1 5 10 15Asp His Leu Arg Thr
20

<210> 95
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:ZFP sequence
 (F1, F2 and F3) from Zif 268

<400> 95
 Arg Ser Asp Glu Leu Thr Arg Arg Ser Asp His Leu Thr Thr Arg Ser
 1 5 10 15

Asp Glu Arg Lys Arg
 20

<210> 96
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:ZFP sequence
 (F1, F2, F3) from SP1

<400> 96
 Lys Thr Ser His Leu Arg Ala Arg Ser Asp Glu Leu Gln Arg Arg Ser
 1 5 10 15

Asp His Leu Ser Lys
 20

<210> 97
 <211> 21
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:ZFP sequence
 (F1, F2, F3) from SBS design GL-8.3.1

<400> 97
 Arg Lys Asp Ser Leu Val Arg Thr Ser Asp His Leu Ala Ser Arg Ser
 1 5 10 15

Asp Asn Leu Thr Arg
 20